

CLAIMS

1. A method for operating a point-to-multipoint wireless communication network, said method comprising:

5 measuring link delays between a root bridge and a plurality of non-root bridges;
and

using said measured link delays to coordinate transmissions in a CSMA/CA scheme.

10 2. The method of claim 1 wherein using comprises:

calculating a common time slot value based on said measured propagation delays.

3. The method of claim 2 wherein using further comprises:

15 distributing said measured link delays and said common time slot value within
said point-to-multipoint wireless communication network.

4. The method of claim 3 further comprising:

aligning contention timing boundaries based on said measured propagation delays
and said common time slot values.

5. The method of claim 1 wherein measuring and using are performed by said root bridge.

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6. The method of claim 1 wherein measuring and using are performed by one of said non-root bridges.

7. The method of claim 1 wherein using comprises:

10 assigning transmission deferral times to said non-root bridges based on said measured link delays to give access preference to more distant ones of said non-root bridges.

8. A method for operating a node in a point-to-multipoint wireless
15 communication network, said method comprising:

receiving a measured link delay and a system slot time from another node; and

using said measured link delay and said system slot time to coordinate transmissions in a CSMA/CA scheme.

9. A method for operating a point-to-multipoint wireless communication network, said method comprising:

measuring link delays between an access point and a plurality of stations; and

5 using said measured link delays to coordinate transmissions in a CSMA/CA scheme.

10. Apparatus for operating a node in a point-to-multipoint wireless communication network, said apparatus comprising:

10 a link delay counter that measures delays between a root bridge and a plurality of non-root bridges; and

a MAC processor that uses said measured link delays to coordinate transmissions in a CSMA/CA scheme.

15 11. The apparatus of claim 10 wherein said MAC layer processor calculates a common time slot value based on said measured propagation delays.

12. The apparatus of claim 11 wherein said MAC layer processor distributes said measured link delays and said common time slot value within said point-to-multipoint wireless communication network.

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13. The apparatus of claim 12 wherein said MAC layer processor aligns contention timing boundaries based on said measured propagation delays and said common time slot values.

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14. The apparatus of claim 10 wherein said node is said root bridge.

15. The apparatus of claim 10 wherein said node is one of said non-root bridges.

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16. The apparatus of claim 10 wherein said MAC layer processor assigns transmission deferral times to said non-root bridges based on said measured link delays to give access preference to more distant ones of said non-root bridges.

17. Apparatus for operating a node in a point-to-multipoint wireless communication network, said apparatus comprising:

5 a physical layer block that receives a measured link delay and a system slot time from another node; and

a MAC layer processor that uses said measured link delay and said system slot time to coordinate transmissions in a CSMA/CA scheme.

18. Apparatus for operating a point-to-multipoint wireless communication network, said apparatus comprising:

10 a link delay counter that measures link delays between an access point and a plurality of stations; and

a MAC layer processor that uses said measured link delays to coordinate transmissions in a CSMA/CA scheme.

19. Apparatus for operating a point-to-multipoint wireless communication network, said apparatus comprising:

15 means for measuring link delays between a root bridge and a plurality of non-root bridges; and

means for using said measured link delays to coordinate transmissions in a CSMA/CA scheme.

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20. A computer program product for operating a point-to-multipoint wireless communication network, said computer program product comprising:

code that causes measurement of said link delays between a root bridge and a
5 plurality of non-root bridges;

code that causes use of said measured link delays to coordinate transmissions in a CSMA/CA scheme; and

a computer-readable storage medium that stores the codes.